



The Prairie Astronomer

The Official Newsletter Of The Prairie Astronomy Club, Inc.

July 2002

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JULY PROGRAM

July program: Inside the Bolshoi

Come see pictures of Martin Gaskell in the Bolshoi! Just WHY was he in the Bolshoi since he can't ballet dance?! Recently Martin was invited to address the Euro-Asian Astronomical Society in Moscow and he had working visits to some of the leading Russian astronomical institutions. At the July PAC meeting Martin presents an extensive profusely-illustrated report on his travels to Russia and the Ukraine. We'll hear about astronomy in the Former Soviet Union (FSU) from the Baltics via the Balkans, through the 'stans to eastern Siberia. We'll hear what it is like to observe with what is still, in a sense, the world's largest optical telescope, and see pictures of the FSU equivalent of Kitt Peak. This will be a very wide-ranging talk covering just about every conceivable facet of FSU astronomy: professional astronomy of all sorts, amateur astronomy, funding of astronomy, education, planetaria, the problem of astrology, light pollution, and more.

PAC-LIST: If you have an e-mail address and are not on the PAC List, you may subscribe by submitting an e-mail to list@4w.com. Write "Subscribe PAC-List" in the body of the e-mail.

READ THIS NEWSLETTER ONLINE

Those who wish to help with publishing and postage costs by receiving only the on-line version of the newsletter should contact Liz Bergstrom at 464-2038. Mark Dahmke or Liz can give you the logon account and password for access. You may receive both the mailed version and the on-line version if you wish.

A printable PDF version of this newsletter is also available through the website.

CLUB EVENTS

PAC Meeting 7:30pm Hyde Observatory
Tuesday, July 30, 2002

NSP at Merritt Resort
Sunday, August 04, 2002

Club Star Party
Friday, August 09, 2002

UNL Student Observatory Open House
Friday, August 16, 2002

PAC Meeting 7:30pm Hyde Observatory
Tuesday, August 27, 2002

Club Star Party
Friday, September 06, 2002

UNL Student Observatory Open House
Friday, September 13, 2002

PAC/OAS Banquet
Friday, October 11, 2002 Mahoney

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The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. Membership expiration date is listed on the mailing label. Membership dues are: **Regular \$20/yr, Family \$22/yr.** Address all new memberships and renewals to: **The Prairie Astronomy Club, Inc., PO Box 5585, Lincoln, NE 68505-0585.** For other club information, please contact one of the club officers listed on the last page of this newsletter. Newsletter comments and articles should be submitted to: **Mark Dahmke, PO Box 80266, Lincoln, NE 68501 or mdahmke@4w.com,** no less than ten days prior to the club meeting. The Prairie Astronomy Club meets the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, NE.

Prairie Astronomy Club Minutes for 6/25/02

President Dave Knisely called the meeting to order. No new visitors. Our June star party was rained out (you mean it rained this year?). Clouds hampered the June 10 eclipse, but there were several visitors to Hyde and the student observatory anyway.

The next PAC star party will be July 5, 2002 at Olive Creek.

The next UNL student observatory public nights will be June 28th and July 19th.

The next Mahoney Star Parties will be July 12 and Sept 27.

The ninth Nebraska Star Party will be Aug 4-9.

The next PAC meeting will be Tuesday July 30.

Hyde Memorial Observatory will hold a public star party Saturday July 6, 2002. Hyde volunteer coordinator Dave Churilla encourages any members to come out and help. Bring your 'scope if you have one!

Program Chair Brian Sivill is always looking for material for PAC meeting programs. If you've done something interesting and would like to share it, let Brian know.

The PAC website has the new electronic newsletter and an archive of previous issues in .pdf format. Get in touch with Mark Dahmke or Liz Bergstrom for the password to access the electronic version of the newsletter.

Treasurer's report: June is election time for the Astronomical League, the governing body of amateur astronomy clubs. PAC voted on the president and vice-president. Also voted on were two amendments to the by-laws of the AL.

We still have some PAC shirts for sale. Also, several NASA materials are available for any member who wants them from Hyde and PAC.

Adjourn to program.

Respectfully submitted by,

Lee Taylor

Hyde Schedule

Date	Team Leader	Operators		Supervisor	Events
August					
8/3	Bill Wells	Lynda Beck	AJ Benker		
8/10	Jeff King	Joe Babcock	Steve Lloyd	Ron V	
8/17	Dave Churilla	Karla Bachman	Joey Churilla		
8/24	Brian Sivill	Justin DeVries	Bob Leavitt		
8/31	Dave Hamilton	Dan Delzell	Jared Delzell	Dave C	

by David Knisely

DATE: July 11th, 2002, 0415 to 0525 hrs UTC.

LOCATION: Rockford Lake S.R.A., Nebraska 40.227N, 96.580W, 1380 ft elevation.

INSTRUMENTS: 10 inch f/5.6 Newtonian, 59x, 101x, 178x, 288x, 445x.

CONDITIONS: Party Cloudy, Temp. 79F, Wind S.E. at 3 mph.

UNAIDED EYE LIMITING MAGNITUDE: 6.6

SEEING: 0.7 to 1.2 arc seconds (Antoniadi II).

OBJECTS VIEWED: NGC 4111, NGC 4117, NGC 4109, NGC 6540, Campbell's Hydrogen Star.

OBSERVATIONS: After seeing a movie, the sky began to show some of the first crystal-clear openings in over a month. Two large but distant thunderstorm complexes seemed to be bracketing me on the southwest and northeast, with some high cirrus blown off of the ones deep in Kansas. However, after looking at the infrared satellite loop, I decided that there was just enough time to get in about an hour's worth of observing to pick up three targets I had been wanting a good look at for some time. Humidity was high, but for the first time in over a month, I didn't have to fight to see through the summer haze which had previously often limited things to 5th magnitude or brighter. I packed my "portable library" in its airline wheely case, charged up the laptop, and headed out to the parking area above the eastern shore of Rockford Lake. My "portable library" often consists of Sky Atlas 2000.0, the new 3-volume edition of Uranometria 2000.0, The Night Sky Observers Guide (Kepple and Sanner, both volumes), the RASC Observer's Handbook, and the current volume of my personal logbook. My copy of Luginbuhl and Skiff's book OBSERVING HANDBOOK AND CATALOGUE OF DEEP-SKY OBJECTS has developed a bad binding from all the use I have given it, so until I get it fixed (or get a replacement), it stays at home. I didn't think I would need it, but it turned out that I probably could have used it for one notable object.

My first target was the nearly edge-on galaxy NGC 4111 in Canes Venatici. I had seen this one 18 years ago when I had first done the Herschel 400 list, but it had been mentioned on sci.astro.amateur not long ago, so I thought I would have a more detailed look at the thing. I recall being somewhat miffed at the first edition of the Astronomical League's "OBSERVE: A Guide to the Herschel Objects", when it described the object as an elliptical galaxy with "distinct outer arms" (they also screwed up by putting it in Ursa Major)! It wasn't all that difficult to find, as it sits just under a degree due east of 5th magnitude 67 UMa, but it was definitely "over the border" in CVn. Its not all that big (4.6' x 1'), but its core is what really stands out with a relatively high core brightness as compared to the rest of the galaxy. At 59x, it was clearly an edge-on, but the outer ends of this narrow spindle of light were quite dim, showing up much better at 101x. The core appeared as a small bright oval region with a star-like center, but that appearance changed a bit at 178x, as the oval nuclear bulge became more diffuse, with the very core more elongated and almost linear in appearance, as if a diffuse lens or bar of haze went through the star-like nucleus. 288x again showed a short almost linear brightening extending through the much brighter star-like nucleus, and I thought I glimpsed a very faint brightening just south of the nuclear region. The outer areas of the galaxy running away from the nuclear bulge were noticeably fainter and diffuse, extending off northward and southward (PA 152 deg.). The ends of the galaxy were slightly rounded and very faint. However, I saw no clear signs of a dark lane anywhere in the galaxy, even though a few visual reports have stated that there might be one.

I have, in the past, been fooled a few times by the "illusion" of a dark lane in galaxies with a somewhat edge-on-like appearance which did *not* in reality have such a lane. I might have argued with myself that it kind of "looked" like there "might" be a lane, but I could not say for certain. Megastar listed the galaxy as an S0, so I consulted Kepple and Sanner. That book had a drawing, which roughly resembled the view I was getting at 178x, but the text also stated, "Averted vision reveals a dark dust lane". When I got home, I did some checking with the Digital Sky Survey. The DSS images showed the oval nuclear bulge and slightly rounded ends, but no sign of any dust lane, although the nuclear region was somewhat overexposed even in the red light image. I checked Luginbuhl and Skiff, and they didn't mention a dark lane either (thank you Brian Skiff). I went around the web for a while looking for some more images until I queried the HST database for any images taken by the HST of NGC 4111. I found one, and that image settled the question for me, as no prominent dark lane was shown, although at a large scale, a few small vague dusty patches were detectable in the HST image. This "revelation" reinforced a somewhat unfortunate impression of the Night Sky Observers Guid (NSOG) that I have been getting lately as I read it. It seems that I have disagreed with some of its descriptions more than a few times, sometimes finding them way too pessimistic on the detail described in the cited instruments, or, as in the case of NGC 4111, just plain incorrect. By contrast, I feel that the descriptions in Luginbuhl and Skiff tend to be somewhat more consistent and realistic in terms of what probably will be seen visually at the telescope.

The field of NGC 4111 also showed several other galaxies at moderate powers. The first one I noticed was NGC 4117 on the other side of an 8th magnitude double star east of NGC 4111. It was smaller and fainter than NGC 4111, but was not terribly difficult at 101x, appearing as a diffuse oval of light with a slightly brighter center. The second object was the

tiny NGC 4109 to the southwest of NGC 4111. It was a bit fainter than NGC 4117 and quite a bit smaller, appearing as a rather small dim fuzzy spot of light. I had Megastar up and running and noticed that it plotted another edge-on galaxy to the northwest; UGC 7089. This one was fairly tough to see, being visible only at 101x and 178x as a *very* dim elongated hazy patch near the limit of vision.

With some clouds visible to the southwest, I decided to turn south to re-observe the "globular" NGC 6540 in Sagittarius. I ran into it quite quickly, and realized that it was not far from one of my favorite dark nebulae Barnard 86. The tiny arc of stars that marks NGC 6540 was easily visible at 59x, although it was far from impressive. Indeed, there were several other condensations in the Milky Way within the field that were as good or better than this so-called "globular". I stopped the scope down to 94mm, and could still see 5 or 6 of the arc stars. At full aperture and 178x, I noted perhaps 15 to 20 stars in the group, with hints of others. The brightest 6 or 8 were part of, or very close to the arc. In the DSS image, there is a little "lightning bolt" feature south of the east side of the arc, and in the ten inch, it was revealed to be merely a string of 4 or 5 faint stars. There was a granular nature to the background in and around the main arc (especially around its brightest star), but in all honesty, there is granularity all over the region, so whether this cluster's marginal central glow was part of the cluster or just Milky Way background is somewhat uncertain. In any case, there isn't much left of this old globular, and it won't be making my "best-of" list anytime soon.

With clouds beginning to thicken to the southwest and lightning flashing to the south, I pushed on to my final target, Campbell's Hydrogen Star in Cygnus (A.K.A. Henize 2-438, PK 64+5.1, PNG 64.7+5.0, ect.) Although it was small, it was fairly easy to find using Megastar's charts despite the very rich starfield. Surprisingly, even at 59x, this 10th magnitude planetary nebula appeared slightly orangish and not quite stellar, although it was still pretty small. The faintly reddish or orangish color continued to be glimpsed up to 101x. I tried the H-beta filter first, and it did make the object stand out, with the rest of the stars being dimmed, so that trick does work if you don't have detailed charts. The UHC also helped slightly, but the OIII's effect was marginal, dimming it a bit over the view seen in the H-beta filter. This one is definitely an H-beta object, which makes it a rarity among planetary nebulae. 178x showed the object's tiny disk and at times the central star. 288x made it seem slightly annular with its prominent central star being easily seen, and 445x also gave that annular impression except when the H-beta filter was used. The H-beta and UHC showed what might have been a very faint diffuse and irregular outer shell, perhaps 20 to 30 arc seconds across, so perhaps the figure for the object's full diameter listed in the new Field Guide to Uranometria is accurate. The main disk-like shell was maybe 7 or 8 arc minutes across, and with the H-beta, it tended to "fill-in", becoming more disk-like rather than annular (dimmed the central star a bit too).

Clouds were starting to move into my viewing field, so I packed things up and headed back into town, but that nice hour or so in the field really helped make up for the weeks under the hot hazy skies we have had lately. This should keep me going for another 3 weeks, when I will be enjoying the skies at the Nebraska Star Party.

The Prairie Astronomer – Online Edition — Mark Dahmke

Have you tried the online newsletter yet? This version of the newsletter is updated weekly and includes an events calendar, newsletter archive, current star charts, plus links to Sky & Telescope, Astronomy, weather reports, radar images, current sky and more. On a daily basis I scan news feeds such as NASA JPL, Space.com and other sites looking for news items that I think might be of interest to club members.

I recently I added some new features to the newsletter. The most noticeable change is that instead of having one shared username and password, each club member can have their own account and password. Also, if your browser is set to accept cookies, it'll remember your username and password so you won't have to log in each time you want to visit the site.

If you haven't visited the site since this change was made, you'll notice that the login screen is different. It'll ask you to enter your email address and password, but if you haven't created your own account yet, just log in using the old username and password, and you'll see a "new user" screen. This screen will ask you to enter your email address and a password of your choice.

Your email address will be your user name, and after you create your account you'll never have to login again using the old 'pac' account and password.

Behind the scenes, this new version of the newsletter makes my job a lot easier. Until recently I've been manually creating the HTML pages when adding new articles, because I wanted to go through the process for a few months to understand all the formatting requirements, and to take into account variations in layout from month to month. The next step was to create a database that stores the article titles, date stamp, short descriptions and URLs. Also I made some changes to the database that stores events and generates the grid calendar. The home page is now generated dynamically, meaning that every time you view it, the page is built from scratch with all of the content coming from a database. It looks in the database to find all recent articles and sorts them by date in descending order, displaying the top 16 available articles. It then

reads the events calendar table to generate the right-hand side bar, showing only events from the current date forward, automatically skipping those that have passed. Even the Hyde schedule has been improved. Dave Churilla now sends me an Excel spreadsheet which I convert to HTML using Star Office, then paste into the website.

Generating the printed newsletter has also gotten a lot easier. I now copy and paste material from the website to the a Word document, including the articles, the calendar, the star chart, the secretary's report and the Hyde schedule. Then I print it and also create the Adobe PDF version using a free utility called ps2pdf, and copy that file back to the web server.

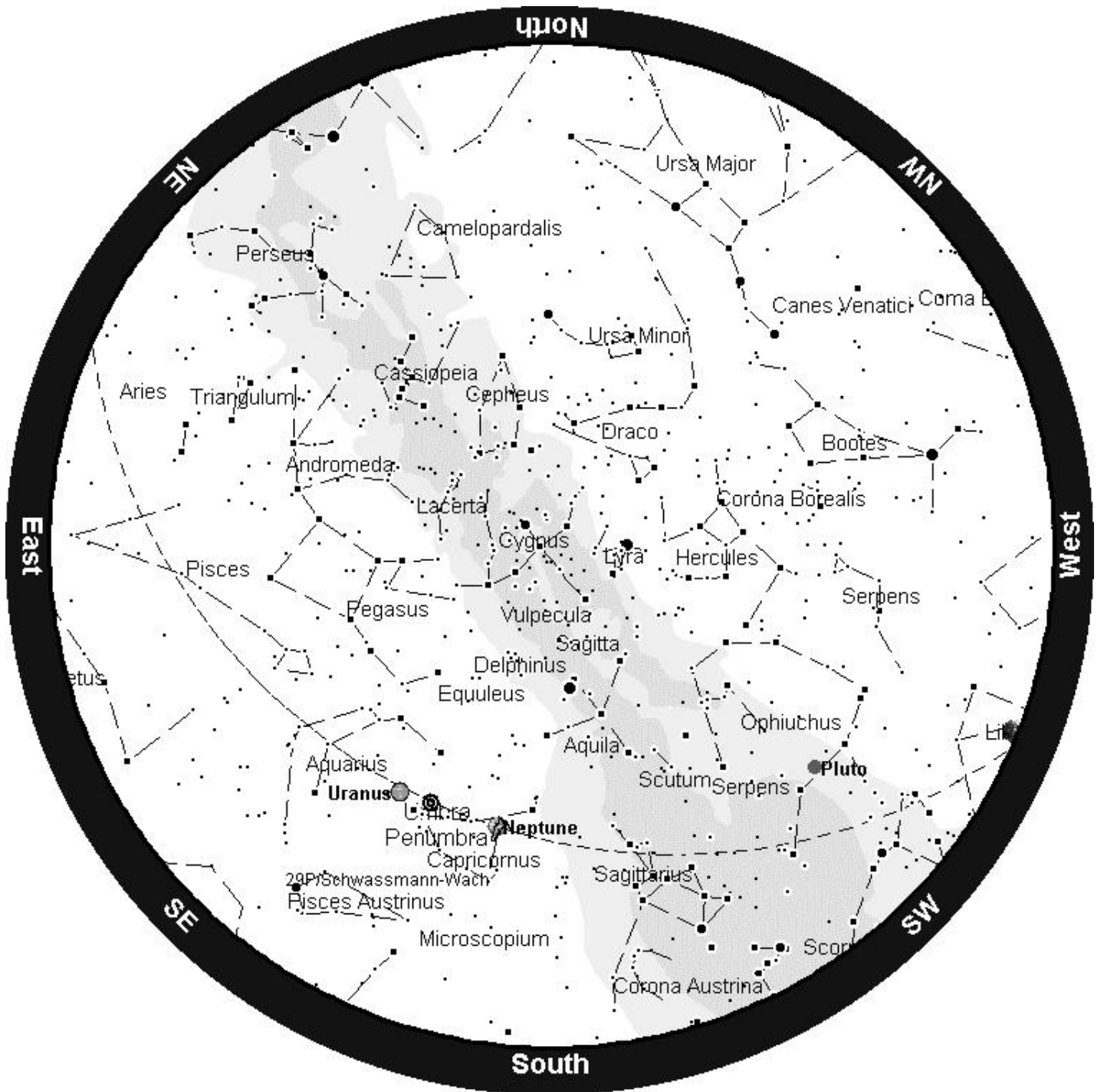
Much of the automation and scripting I've described is based on applications my company (Information Analytics) has developed for other portal websites. For example, the KOLN/KGIN site uses a very similar mechanism for news and weather updates. I borrowed some of the grid calendar display code from another site I built, and incorporated the moon phases and sunrise/sunset times by rewriting old BASIC code from Sky & Telescope.

With these improvements to the website and database, I'm able to manage the site and add new content in less than half the time it took only a month ago, and compared to when I took over editing the newsletter it's down to about 20%. After I do some more cleanup and testing, I'll be able to delegate some of the work to other club members, such as letting Dave Churilla login and post the Hyde schedule directly, and allowing others to add news items and events.

I'd also appreciate feedback from club members. Is there anything else you'd like added to your newsletter? Are there other websites you'd like to have linked to the home page? Please let me know what type of content you want to see.

If you haven't used the online newsletter yet, please try it and you'll be helping save the club some money on printing and postage. To get the username and password, contact Liz Bergstrom. If you have any problems logging in, email me at mdahmke@4w.com.

August Star Chart



Events Calendar

August 2002						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 	2 	3 
				Sun: 18:23 - 08:42	Sun: 18:24 - 08:41	Sun: 18:25 - 08:40 Hyde Observatory open to the public (sunset-11pm)
4 	5 	6 	7 	8 	9 	10 
Sun: 18:26 - 08:39 NSP at Merritt Resort	Sun: 18:27 - 08:38 NSP at Merritt Resort	Sun: 18:28 - 08:36 NSP at Merritt Resort	Sun: 18:29 - 08:35 NSP at Merritt Resort	Sun: 18:30 - 08:34 NSP at Merritt Resort	Sun: 18:31 - 08:33 NSP at Merritt Resort Club Star Party	Sun: 18:32 - 08:32 Hyde Observatory open to the public (sunset-11pm)
11 	12 	13 	14 	15 	16 	17 
Sun: 18:33 - 08:30	Sun: 18:34 - 08:29	Sun: 18:35 - 08:28	Sun: 18:36 - 08:26	Sun: 18:37 - 08:25	Sun: 18:38 - 08:23 UNL Student Observatory Open House	Sun: 18:39 - 08:22 Hyde Observatory open to the public (sunset-11pm)
18 	19 	20 	21 	22 	23 	24 
Sun: 18:40 - 08:21	Sun: 18:41 - 08:19	Sun: 18:42 - 08:18	Sun: 18:43 - 08:16	Sun: 18:44 - 08:15	Sun: 18:45 - 08:13	Sun: 18:46 - 08:12 Hyde Observatory open to the public (sunset-11pm)
25 	26 	27 	28 	29 	30 	31 
Sun: 18:47 - 08:10	Sun: 18:47 - 08:09	Sun: 18:48 - 08:07 PAC Meeting 7:30pm Hyde Observatory	Sun: 18:49 - 08:06	Sun: 18:50 - 08:04	Sun: 18:51 - 08:02	Sun: 18:52 - 08:01 Hyde Observatory open to the public (sunset-11pm)

**Directions to Olive Creek
Observing Site**

Shorter:

Take Hwy 77 South out of Lincoln until you get to the Crete corner (junction Hwy 77 and Hwy 33). Go West on Hwy 33 (toward Crete) until you get to SW 72 St. Turn Left (South) on SW 72 St. and go about 5 miles until you get to SW Panama Rd. Turn right (West) until you get to SW 100 St. (SW 100 St does NOT go through to Hwy 33). Turn Left (South) on SW 100 St and go about 1 to 1 1/2 miles until you see the sign and entrance to Olive Creek (this is the West side of the Park). It's on your left (East) side of the road.

More Black Top:

Take Hwy 77 South out of Lincoln until you get to the Crete corner (junction Hwy 77 and Hwy 33). Go West on Hwy 33 (toward Crete) until you get to about SW 114 St. - the first intersection after SW 100 St. (forgot to look at this street sign, sorry - you'll see a sign for Olive Creek though at this road- but don't count on anymore signs after that, I didn't see any). Turn Left (South) on SW 114 St and go about 5 miles or so until you get to SW Panama Rd (you'll see a church and small school on your right). Turn Left (East) and go about a mile to SW 100 St, then turn Right (South) and go 1 to 1 1/2 miles until you see the Olive Creek entrance and sign (on your left hand side of the road).

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First Class Mail

**Next PAC Meeting
July 30, 2002
7:30 PM
Hyde Observatory**